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SMITHSONIAN INSTITUTION
U. S. NATIONAL MUSEUM

Vol. 107 Washington: 1957 No. 3379

RHYNOBRISSUS CUNEUS, A NEW ECHINOID FROM NORTH CAROLINA

By C. Wythe Cooke

The U. S. National Museum has recently received, as accession No. 201,828, two lots of a spatangoid echinoid collected by Miss Maureen Downey at Fort Macon Beach, near Beaufort, N. C. The first lot consists of two small and one larger nearly perfect yellowish individuals; the other, found about Jan. 15, 1956, includes fragments of one small and three larger white tests. Most of the specimens retain some of the spines. This species is particularly interesting because it represents a very rare genus known in collections by only a few individuals and now reported for the first time from the Atlantic Ocean.

Order Spatangoida L. Agassiz, 1840

Family Spatangidae Gray, 1825

Genus *Rhynobrissus* A. Agassiz, 1872

Rhynobrissus A. Agassiz, Bull. Mus. Comp. Zool., vol. 3, p. 58, 1872; Mem. Mus. Comp. Zool., vol. 3, p. 590, 1873.—H. L. Clark, Mem. Mus. Comp. Zool., vol. 46, p. 213, 1917; Carnegie Inst. Washington Publ. 566, p. 373, 1946.

Rhinobrissus A. Agassiz. Pomel, Classification méthodique et genera des échinides, p. 33, 1883.—Duncan, Journ. Linnean Soc. London, Zool., vol. 23, p. 246, 1889.—Lambert and Thiéry, Essai de nomenclature raisonnée des échinides, fasc. 6, p. 491, 1924.—Mortensen, Monograph of the Echinoidea, vol. 5, pt. 2, p. 486, 1951.

Type species: *Rhynobrissus pyramidalis* A. Agassiz, 1872, from China, by monotypy. Agassiz (1873, p. 590, pl. 23a, figs. 4–6) shows excellent photographs, somewhat reduced, of the top, bottom, and side of the type but does not figure the posterior end; the anal and subanal fascioles are shown only in profile. According to his description the anal fasciole is not connected with the subanal fasciole, and it extends some distance above the anal system. The posterior end of the test slopes backward to such an extent that the subanal plastron projects beyond the periproct.

The genus has been reviewed in Mortensen's "Monograph of the Echinoidea." Besides the type species, there are three species from the Pacific. Of these, *Rhynobrissus placopetalus* A. Agassiz and H. L. Clark, from the Hawaiian Islands, is suspected by Mortensen to be merely the young of *R. pyramidalis*. Little is known about *Rhynobrissus macropetalus* H. L. Clark, from West Australia, which seems to be difficult to distinguish from *R. pyramidalis*. *Rhynobrissus hemiasteroides* A. Agassiz, from Tahiti, the Hawaiian Islands, and Australia, is easily distinguishable from other species by its anterior apex.

A young echinoid from Cuba, originally named *Rhynobrissus micrasteroides* by A. Agassiz, later became the type of *Neopneustes* Duncan (1889).

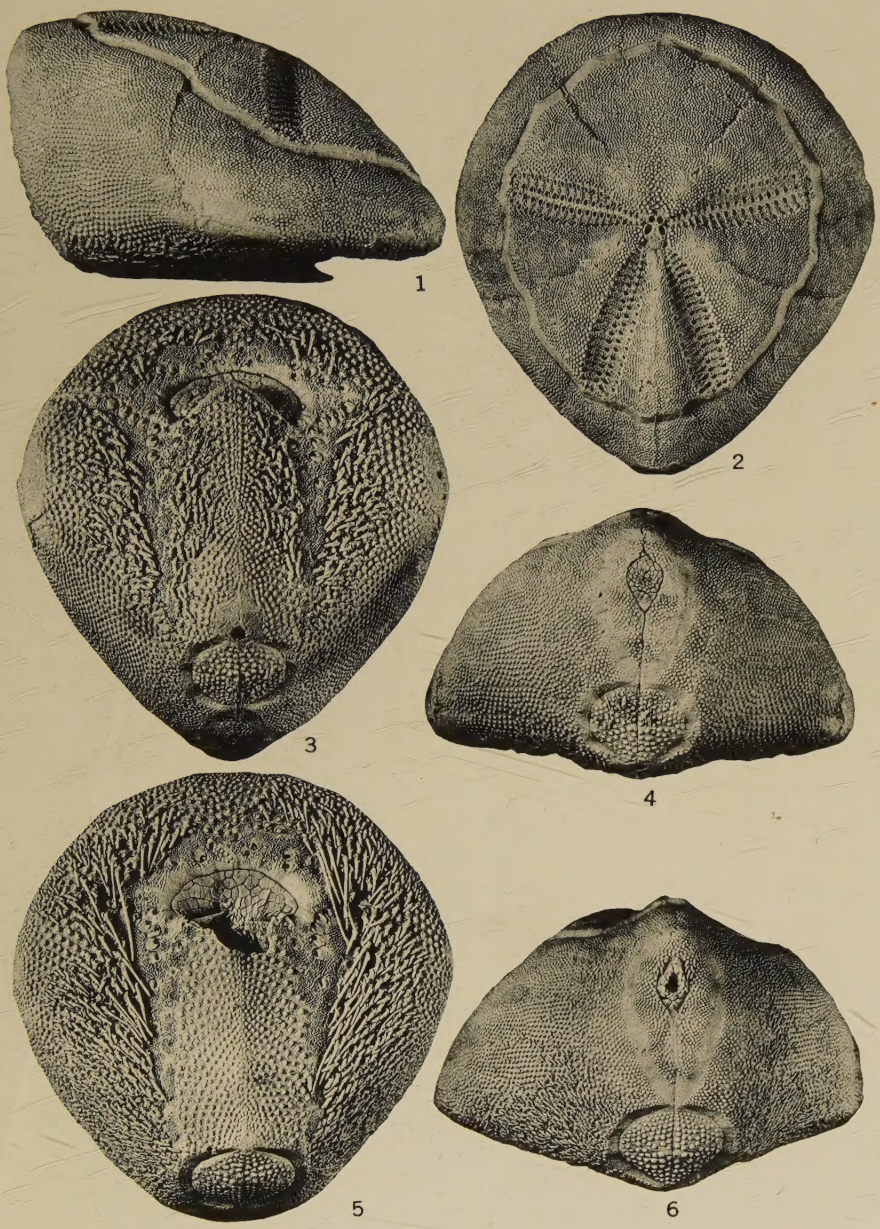
Rhynobrissus cuneus Cooke, new species

Plate 1

Description.—The horizontal outline is ovate, rounded in front, widest at the midline, bluntly pointed behind. The longitudinal outline is wedge-shaped (whence the specific name *cuneus*, a wedge), with the base line nearly flat; the profile of the upper surface is slightly arched, the highest point near the posterior end, thence steeply sloping forward to the acutely rounded ambitus; the profile of the posterior end is gently convex, slightly overhanging. The transverse outline is nearly semicircular, convex above.

The nearly central apical system is ethmolytic, i. e., the madreporite extends between and beyond the posterior ocular plates. The mature test has four large genital pores, the anterior pair circular and close together, the posterior pair larger, oval, diverging. One young test has only three genital pores.

The anterior ambulacrum is flush, not petaloid, the pores small, far apart, and inconspicuous. The paired ambulacra have rather long, nearly equal, straight, sunken petals, the anterior pair widely separated, diverging at an angle of approximately 137°. The posterior petals are much closer together, diverging at an angle of approximately 39°. The poriferous zones are wider than the interporiferous zones, with oval, conjugate pores.



Rhynobrissus cuneus, new species. 1–4, Holotype, USNM E–8032: 1, right side; 2, top; 3, bottom; 4, posterior end. 5, 6, Paratype, USNM E–8033: 5, bottom; 6, posterior end. All × 1½.

The posterior paired interambulacra do not reach the peristome. The odd interambulacrum includes a straight-sided amphisternous plastron extending from the labrum to the posterior truncation, where it adjoins a circular subanal plastron surrounded by the subanal fasciole. The anal fasciole touches the subanal fasciole; and it extends upward and nearly encloses the periproct in a vertically elongated ellipse, which is not quite closed at the top. The area within the anal fasciole and around the periproct differs little in decoration from that outside the fasciole.

A weakly scalloped elliptical peripetalous fasciole touches the ends of the petals.

The strongly reniform peristome is covered by many movable plates. The mouth is arched over by the projecting, bluntly pointed labrum. The phyllodes are conspicuous.

The bilunate or pyriform periproct is set high up on the narrow posterior end of the test and is covered with movable plates.

A granulation of small, close-set tubercles covers the entire upper surface except the peripetalous fasciole. The granulation extends down over the sides, but the ambulacra on the lower surface are bare. The tubercles on the plastrons are somewhat larger.

Most of the surface is covered with long, hairlike, silky spines, many of which have flat, spatulate ends.

The dimensions of the holotype are: Length, 37 mm.; width, 37 mm.; height, 23.5 mm. A smaller test measures 25 by 25.3 by 15.5 mm.

Occurrence.—Cast up by the waves at Fort Macon Beach, N. C.

Type.—U. S. National Museum E–8032; paratype, E–8033.

Comparisons.—The horizontal outline of this species is similar to that of *Rhynobrissus pyramidalis*, but the petals are proportionately longer. The two species are markedly different in vertical profile, the posterior end of the Chinese species sloping backward, whereas that of the American species is nearly vertical, even slightly overhanging. This difference in slope is caused by the much shorter, nearly equilateral lower surface of *R. cuneus*.

According to Agassiz (1873, p. 592), the anal fasciole of *Rhynobrissus pyramidalis* begins immediately above the subanal plastron but is not connected with it. In *R. cuneus* the two fascioles are in contact and separate the anal area from the subanal plastron.

The sloping upper surface and wedgelike shape distinguish *Rhynobrissus cuneus* from *R. hemiasteroides* as figured by Mortensen (1951, p. 490, pl. 28, figs. 3, 4, 7–9, 13, 14). The upper surface in *R. hemiasteroides* is almost flat in vertical profile. Mortensen's figure 13 also shows a wide separation between the anal fasciole and the subanal fasciole, which are in contact in *R. cuneus*.

U. S. GOVERNMENT PRINTING OFFICE: 1957